

What is claimed is:

1. A base station apparatus comprising:
 - storing means for storing a channel order in which
 - 5 call terminations occurred; and
 - channel allocating means for searching channels in response to a channel allocation request with reference to said channel order in which call terminations occurred and allocating a communication channel requested by a
 - 10 call to a free channel.
2. The base station apparatus according to claim 1, wherein the channel allocating means searches for channels in ascending order of time differences between the times
- 15 at which call terminations occurred and the time at which channel allocation starts.
3. The base station apparatus according to claim 1, wherein the recording means updates a table for recording times
- 20 at which call terminations occurred for each channel and the channel allocating means searches for only channels whose time differences between times at which call terminations occurred and the time at which channel allocation starts fall within a predetermined time range.
- 25
4. The base station apparatus according to claim 1, wherein the recording means updates the content of a table for

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recording precedence functions that indicate the probability of successful communications in the respective channels and the channel allocating means references the channel order in which call terminations occurred and searches for, when no allocatable channels are found, channels in descending order of said precedence functions.

5. The base station apparatus according to claim 1, wherein the recording means updates the content of a table for recording precedence functions that indicate the probability of successful communications in the respective channels and the channel allocating means preferentially searches for channels whose precedence function is equal to or greater than a predetermined value and whose channel order falls within a predetermined range in ascending order of time differences between times at which call terminations occurred and the time at which channel search starts.

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6. A base station apparatus comprising:

recording means for recording uplink/downlink precedence functions for all channels; and

channel allocating means for controlling said uplink/downlink precedence functions independently.

7. The base station apparatus according to claim 6, wherein

the channel allocating means updates the precedence
function of a channel of the downlink when the same channel
of the uplink is allocated and updates the precedence
function of a channel of the uplink when the same channel
5 of the downlink is allocated.

8. The base station apparatus according to claim 6, wherein
the channel allocating means decreases the precedence
function of the channel of the link opposite to that of
10 the same channel whose precedence function is increased.

9. The base station apparatus according to claim 6, wherein
the channel allocating means increases the precedence
function of the channel of the link opposite to that of
15 the same channel whose precedence function is decreased.

10. The base station apparatus according to claim 6,
wherein when the uplink and downlink of a channel are
switched, the channel allocating means sets the
20 precedence function of the switched channel to a
predetermined value.

11. The base station apparatus according to claim 6,
wherein the channel allocating means updates precedence
25 functions based on whether power of a desired signal is
greater or smaller than power of an interference signal.

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12. The base station apparatus according to claim 11,
wherein the channel allocating means decreases precedence
functions when a variation of power of the desired signal
is small and at the same time power of the interference
5 signal is increasing.

13. A base station apparatus comprising:

storing means for storing a precedence function of
each slot;

10 slot selecting means for selecting search target
slots based on said precedence function of each slot;
and

channel allocating means for allocating channels
based on an estimated value of quality of the propagation
15 path of said selected slot and updating said precedence
function, wherein the channel allocating means updates
said precedence function at predetermined timing other
than the channel allocating timing.

20 14. The base station apparatus according to claim 13,
wherein the channel allocating means updates precedence
functions in a certain frame cycle.

15. The base station apparatus according to claim 13,
25 wherein the channel allocating means updates precedence
functions at timing at which call terminations occur.

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16. The base station apparatus according to claim 13,
wherein a radio communication is carried out according
to a CDMA/TDD communication system and the channel
allocating means updates precedence functions based on
5 the number of codes to be multiplexed.

17. The base station apparatus according to claim 16,
wherein the channel allocating means decreases precedence
functions of slots whose number of codes to be multiplexed
10 is equal to or smaller than a threshold and increases
precedence functions of slots whose number of codes to
be multiplexed is greater than said threshold.

18. A base station apparatus carrying out a radio
15 communication according to a CDMA/TDD communication
system, comprising:

storing means for storing thresholds by
transmission rate and precedence functions of slots by
transmission rate;

20 slot selecting means for selecting search target
slots based on the precedence function with a transmission
rate corresponding to a call connection request; and

channel allocating means for allocating channels
based on whether the reception interference power of the
25 selected slot is greater or smaller than a threshold of
the transmission rate corresponding to the call
connection request.

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19. The base station apparatus according to claim 18,
wherein the slot selecting means selects a slot with the
highest precedence function from among unselected search
5 target slots as the search target slot.

20. The base station apparatus according to claim 18,
wherein when the reception interference power of a search
target slot is equal to or smaller than a threshold, the
10 channel allocating means allocates a channel to said slot.

21. The base station apparatus according to claim 18,
wherein the channel allocating means increases the
precedence function of a slot to which a channel is
15 allocated.

22. The base station apparatus according to claim 18,
wherein when the reception interference power of a search
target slot is greater than a threshold, the channel
20 allocating means decreases the precedence function of
said slot.

23. A base station apparatus carrying out a radio
communication according to a CDMA/TDD communication
25 system comprising:

storing means for storing a precedence function and
the number of codes to be multiplexed of each slot;

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slot selecting means for selecting search target slots based on said precedence function and said number of codes to be multiplexed of each slot; and

channel allocating means for allocating channels
5 based on whether the reception interference power of the selected slot is greater or smaller than a threshold.

24. The base station apparatus according to claim 23,
wherein the slot selecting means selects a slot with the
10 highest number of codes to be multiplexed from among unselected candidate slots as the search target slot.

25. The base station apparatus according to claim 24,
wherein the slot selecting means selects a slot with the
15 highest precedence function from among selection candidate slots with the highest number of codes to be multiplexed as the search target slot.

26. The base station apparatus according to claim 23,
20 further comprising selection order calculating means for calculating a selection order function using a precedence function of each slot and the number of codes to be multiplexed of each slot as parameters, wherein slot
selecting means selects a slot with the highest selection
25 order function from among unselected slots as the search target slot.

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27. The base station apparatus according to claim 26,
wherein the selection order calculating means calculates
a selection order function of each slot by adding the
number of codes to be multiplexed of said slot to a value
5 obtained by multiplying the precedence function of said
slot by a weighting factor.

28. The base station apparatus according to claim 23,
wherein when the reception interference power of a search
10 target slot is equal to or smaller than a threshold, the
channel allocating means allocates a channel to said slot.

29. The base station apparatus according to claim 23,
wherein the channel allocating means increases the
15 precedence function of a slot to which a channel is
allocated.

30. The base station apparatus according to claim 23,
wherein when the reception interference power of the
20 search target slot is greater than the threshold, the
channel allocating means decreases the precedence
function of said slot.

31. A base station apparatus carrying out a radio
25 communication according to a CDMA/TDD communication
system comprising:

slot selecting means for selecting a handover target

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channel and a handover destination candidate slot of said channel;

handover means for determining a handover destination slot from among said selected candidate slots
5 and moving said selected channel to the handover destination slot; and

timing controlling means for instructing said slot selecting means and said handover means to start intra-cell handover.

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32. The base station apparatus according to claim 31, wherein the slot selecting means selects a channel corresponding to a slot to which only one 1-code channel is allocated as the handover target channel.

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33. The base station apparatus according to claim 31, wherein the slot selecting means selects a channel allocated to a slot with the lowest precedence function as the handover target channel.

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34. The base station apparatus according to claim 31, wherein the handover means performs channel searching for a candidate slot and decides said slot as the handover destination slot when the interference power is equal
25 to or smaller than a threshold.

35. The base station apparatus according to claim 31,

wherein the timing controlling means instructs the start of intra-cell handover at timing at which a call connection request is issued.

5 36. The base station apparatus according to claim 31, wherein the timing controlling means instructs the start of intra-cell handover at timing at which call termination occurs.

10 37. The base station apparatus according to claim 31, wherein the timing controlling means instructs the start of intra-cell handover in a predetermined frame cycle.

15 38. A channel allocation method comprising the steps of:
referencing the channel order in which call terminations occurred in response to a channel allocation request;

searching for channels in ascending order of time differences between times at which call terminations occurred and the time at which channel allocation starts;
20 and

allocating a communication channel requested by a call generated to a free channel.

25 39. A channel allocation method comprising the steps of:
controlling uplink/downlink precedence functions individually for all channels; and

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decreasing the precedence function of the channel of the link opposite to that of the same channel whose precedence function is increased.

- 5 40. A channel allocation method comprising the steps of:
controlling uplink/downlink precedence functions individually for all channels; and

increasing the precedence function of the channel of the link opposite to that of the same channel whose
10 precedence function is decreased.

41. A channel allocation method comprising the steps of:
controlling uplink/downlink precedence functions individually for all channels; and

15 setting, when the uplink and downlink of a channel are switched, the precedence function of the switched channel to a predetermined value.

42. A channel allocation method comprising the steps of:
20 selecting a search target slot based on a stored precedence function of each slot;

allocating channels based on an estimated value of the propagation path quality of said selected slot and updating said precedence function; and

25 updating said precedence function at predetermined timing other than channel allocating timing as appropriate.

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43. A channel allocation method in a radio communication according to a CDMA/TDD communication system, comprising the steps of:

5 selecting a search target slot based on a precedence function at a transmission rate corresponding to a call connection request; and

 allocating channels based on whether the reception interference power of the selected slot is greater or
10 smaller than a threshold of the transmission rate corresponding to the call connection request.

44. A channel allocation method in a radio communication according to a CDMA/TDD communication system, comprising
15 the steps of:

 selecting a search target slot based on a precedence function of each slot and the number of codes to be multiplexed of each slot; and

 allocating channels based on whether the reception
20 interference power of the selected slot is greater or smaller than a threshold.

45. A channel allocation method in a radio communication according to a CDMA/TDD communication system, comprising
25 the steps of:

 selecting a handover target channel and a handover destination candidate slot of said channel at

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predetermined timing;

determining a handover destination slot from among
said selected candidate slots; and

moving said selected channel to the handover
5 destination slot.

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